

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of etching an uniform silicon layer, comprising:
providing a patterned silicon layer with etching residues on sidewalls thereof;
treating said patterned silicon layer with etching residues on sidewalls thereof
using a gas comprising oxygen and etching agent to thereby form ~~forming~~ an etching
buffer layer conformally on the etching residues and the top surface of the patterned
silicon layer; and
etching the etching buffer layer, the etching residues, and the patterned silicon
layer until the thickness of the patterned silicon layer is reduced.
2. (Original) The method as claimed in claim 1, wherein the etching buffer layer
comprises silicon oxide (SiO₂).
3. (Original) The method as claimed in claim 2, wherein the etching buffer layer is
formed by oxidation.
4. (Original) The method as claimed in claim 1, further comprising Cl₂, SF₆, or HBr used
during etching.
5. (Original) The method as claimed in claim 1, wherein the thickness of the etching
buffer layer is about 5~20nm.
6. (Original) The method as claimed in claim 1, wherein the thickness of the patterned
silicon layer is about 120~250nm.
7. (Currently Amended) A method of etching an uniform silicon layer, comprising:
providing a silicon layer;

forming a mask with patterns on the silicon layer;
performing a first etching to pattern the silicon layer using the mask as a shield, to form a patterned silicon layer with patterns and etching residues on sidewalls thereof;
removing the mask;
treating said patterned silicon layer with patterns and etching residues on sidewalls thereof using a gas comprising oxygen and etching agent to thereby form
~~forming~~ an etching buffer layer conformally on the etching residues and the top surface of the patterned silicon layer; and
performing a second etching to remove the etching buffer layer and the etching residues, to reduce the thickness of the patterned silicon layer.

8. (Original) The method as claimed in claim 7, wherein the mask is a photoresist layer.

9. (Original) The method as claimed in claim 7, wherein the etching buffer layer comprises silicon oxide (SiO_2).

10. (Original) The method as claimed in claim 9, wherein the etching buffer layer is formed by oxidation.

11. (Previously presented) The method as claimed in claim 7, further comprising Cl_2 , SF_6 , or HBr used during the second etching.

12. (Currently amended) The method as claimed in claim 7 ~~1~~, wherein the thickness of the etching buffer layer is about 5~20nm.

13. (Original) The method as claimed in claim 7, wherein the thickness of the patterned silicon layer is about 120~250nm.

14. (Currently Amended) A method of etching a silicon layer to avoid non-uniformity, comprising:

providing a silicon layer;
forming a mask with patterns on the silicon layer;
performing a first etching to pattern the silicon layer using the mask as a shield,
to form a patterned silicon layer with patterns and etching residues on sidewalls
thereof;
removing the mask;
introducing a gas containing oxygen treatment, using a gas comprising oxygen
and etching agent, to conformally form an etching buffer layer on the etching residues
and the top surface of the patterned silicon layer; and
performing a second etching to remove the etching buffer layer and the etching
residues formed on sidewalls thereof, to reduce the thickness of the patterned silicon
layer.

15. (Original) The method as claimed in claim 14, wherein the mask is a photoresist
layer.

16. (Previously presented) The method as claimed in claim 14, further comprising Cl_2 ,
 SF_6 , or HBr used during the second etching.

17. (Original) The method as claimed in claim 14, wherein the thickness of the etching
buffer layer is about 5~20nm.

18. (Original) The method as claimed in claim 14, wherein the thickness of the patterned
silicon layer is about 120~250nm.

19. (Currently amended) The method as claimed in claim 14, wherein the gas comprises
90%~100% oxygen and not more than 10~0% etching agent used in second etching.

20. (Original) The method as claimed in claim 14, wherein the gas containing oxygen
treatment is performed at about 10~90°C.